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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/809,956      | 03/26/2004  | Matthew J. Dejneka   | SP04-025            | 7898             |

22928 7590 05/18/2006

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| EXAMINER |
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LEVKOVICH, NATALIA A

|          |              |
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| ART UNIT | PAPER NUMBER |
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1743

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/809,956

Applicant(s)

DEJNEKA ET AL.

Examiner

Natalia Levkovich

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-10, 12-14 and 16-23 is/are pending in the application.  
4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-4, 6-10, 12-14 and 21-23 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☒ Claim(s) 1-4, 6-10, 12-14 and 16-23 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendments and remarks dated 02/21/2006 have been acknowledged by the Examiner and entered

***Claim Rejections - 35 USC § 102***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in the prior Office Action.

- 3 Claims 1-3, 6, and 8 are rejected under 35 U.S.C. 102(b) as anticipated by Swedberg (US 5085756).

See the appropriate paragraphs of the prior Office Action.

4. Claims 1-3, 6 and 8-9 are rejected under 35 U.S.C. 102(b) as anticipated by He et al. (US 20030049862).

See the appropriate paragraphs of the prior Office Action.

***Claim Rejections - 35 USC § 103***

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of Swedberg or He in view of Chu et al. (US 5985164).

See the appropriate paragraphs of the prior Office Action.

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6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of Swedberg or He in view of Shukla et al. (US 6416716).

See the appropriate paragraphs of the prior Office Action.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of Swedberg or He in view of Cole et al. (US 5879949).

See the appropriate paragraphs of the prior Office Action.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of Swedberg or He in view of Roach et al. (US 20010005489).

See the appropriate paragraphs of the prior Office Action.

9. Claims 12 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swedberg.

With respect to claims 12 and 23, Swedberg does not teach the capillary to be smaller than 'twice the smallest dimension of the particle being trapped', or to be dimensioned to 'form a monolayer of particles ...in a serial fashion'. The diameter of the capillary is a result effective variable. The Court decided *In Re Boesch* (205 USPQ 215) that optimization of a result effective variable is ordinarily within the skill of the art. A result effective variable is one that has predictable and well-known characteristics. The choice of a capillary diameter would result (with certain level of predictability, depending on the type of particle size distribution within a nominal range) in trapping particles of predetermined sizes (with more narrow size distribution). Provided the capillary has a constant diameter along its length, the trapped particles would form a 'monolayer', as claimed. It would have been obvious to one of ordinary skill in the art at

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the time the invention was made to have optimized the capillary diameter in the modified devices of Swedberg, in order to trap the particle of certain sizes, with better size distribution.

Referring to claim 21, Swedberg does not teach filter to comprise microstructured fibers. However, such fibers are well known in the art (for example, in nano-technology). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed these fibers in the modified devices of Swedberg, in order to trap the particle of ultra small sizes.

As to claim 22, although Swedberg does not teach fusing the filter to the walls of capillary, it would have been within an ordinary skill in the art to have fused the filter to the walls in the modified devices of Swedberg, in order to attach the filter in more reliable manner.

10. Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over He.

Referring to claim 14, although He discloses an "optical detection device" (see Claim 26), the publication is silent in regards to a shape of the detection zone of the capillary.. However, it would have been within an ordinary skill in the art to have arranged the detection zone such that its shape would correspond to the shape of the detector, in order to ensure better collection of light during detection.

As to claim 16, He does not the detector to be a CCD, however, these devices are notoriously well known. It would have been within an ordinary skill in the art to have

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employed CCD in the modified apparatus of He , since CCD are easy to operate and efficient.

### ***Response to Arguments***

11. Applicant's arguments dated 02/21/2006 have been fully considered but they are not persuasive and moot in view of new grounds of rejection.

Applicant argues that filters disclosed by Swedberg and He have pores sized randomly, compared to the claimed invention. Examiner notes that the amended claims of the instant application do not recite an even distribution of the capillary diameters.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Levkovich whose telephone number is 571-272-2462. The examiner can normally be reached on Mon-Fri, 8 a.m.-4p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700